

**REMARKS**

As a preliminary, Applicant and Applicant's representative thank the Examiner for the interview of June 10, 2009.

By the present amendment, claims 1 and 9 have been amended to clarify that the first and second regeneration operation mode are by molecular O<sub>2</sub> combustion of the soot, to address the objection as set forth below, and to present separate paragraphs for improved legibility.

Support for the added recitations is found in the original application, for example, it is immediately derived from the passage at page 5, lines 6-22.

Further, new claims 17-18 dependent on claims 9 and 1, respectively, have been added.

Support for the added recitations is found in the original application, for example, on page 5, lines 8-9.

Claims 1-18 are pending in the present application. Claims 1 and 9 are the only independent claims.

I. Objection to claim 1

In the Office Action, claim 1 is objected to as reciting "catalyst" instead of "catalyst-forming means" at lines 4 and 13 and "device" instead of "means" at line 15.

Claim 1 has been amended as suggested in the Office Action. Accordingly, it is submitted that the objection should be withdrawn.

II. Art rejections

In the Office Action, claims 1, 2, 7-10, and 15-16 are rejected under 35 U.S.C. 103(a) as obvious over US 20030046929 to Terada et al. (“Terada”) in view of US 6,769,245 to Itoh et al. (“Itoh”).

Further, claims 3, 4, 6, 11, 12, and 14 are rejected under 35 U.S.C. 103(a) as obvious over Terada in view of Itoh, further in view of US 20020007629 to Asanuma et al. (“Asanuma”).

Also, claims 5 and 13 are rejected under 35 U.S.C. 103(a) as obvious over Terada in view of Itoh, further in view of US 4,655,037 to Rao et al. (“Rao”).

Reconsideration and withdrawal of the rejections is respectfully requested. As discussed at the interview, Terada, like Itoh, has basically only two regeneration modes, a continuous regeneration mode based on low-temperature NO<sub>2</sub> oxidation of the soot, and a “compulsive” regeneration mode based on high-temperature (molecular) O<sub>2</sub> combustion of the soot in rich mode (post-injections), preceded by a heating step with retarded main injections. See Terada at paragraphs 0045-0047.

Thus, Terada does not disclose two distinct “compulsive” regeneration modes, one in lean mode and the other with alternating lean and rich modes.

In summary, Terada at paragraph 0047 only discloses a single, rich-mode regeneration mode by (molecular) O<sub>2</sub> combustion of the soot.

In contrast, an advantage of the presently claimed invention is that it is possible (1) to perform regeneration with lean mode in favorable operating conditions of the engine, and (2) to limit the rich mode to alternating periods during unfavorable operating conditions of the engine.

Such punctual heating in unfavorable conditions in turn makes it possible to promote lean mode regeneration, as explained and illustrated at page 5, lines 24-27 and page 6, lines 23-27 and as shown on Fig. 2. The features of the presently claimed invention and their advantages are not taught or suggested in Terada, and the other references fail to remedy these deficiencies. Therefore, the present claims are not obvious over the cited references taken alone or in any combination.

Further, with respect to the dependent claims, it is submitted that the cited references fail to teach or suggest the combined features of each of these claims. Therefore, each of these respective claims is not obvious over the cited references taken alone or in any combination.

In view of the above, it is submitted that the rejections should be withdrawn.

#### Conclusion

In the event there is, in the Examiner's opinion, any outstanding issue and such issue may be resolved by means of a telephone interview, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number listed below.

In the event this paper is not considered to be timely filed, the Applicants hereby petition for an appropriate extension of the response period. Please charge the fee for such extension and any other fees which may be required to our Deposit Account No. 502759.

Amendment  
US Appl. No. **10/595,824**  
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Respectfully submitted,

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